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WASHINGTON LETTER.

WASHINGTON, D. C., APRIL 15, 1898.

The principal topics which may be considered as of geographic interest in Washington have been, first, and primarily, the all-absorbing question of Cuban affairs. This has pushed into the background the otherwise weighty matter of surveys and explorations of Alaska—the land of ice and gold. The public, also, has almost lost sight of the controversy over the future of the forest reserves, and apparently is ignorant of the attempts being made by interested parties to secure the nullification of the President's proclamation.

CUBA.—The reports of the consular officers lately resident in Cuba have at last been made public in response to resolutions adopted by Congress. These papers, held back for State reasons, have been made accessible to all citizens, and the facts of the indescribable suffering and wholesale death by starvation are related in the pages usually devoted to statistics of trade or the condition of special industries. These reports embrace communications from consuls at Matanzas, Santiago de Cuba, Sagua la Grande and other points. The more startling or distressing facts contained in them have been by this time diffused through the public press and the estimates as to the enormous decrease in population through starvation and pestilence have been many times repeated.

The efforts of various departments of the Government at Washington to secure correct geographic information concerning the island have brought out strongly the general lack of precise information. It has been possible to compile maps covered with names, presumably those of settlements, and with a network of lines indicating means of communication, but as to whether these roads are passable even by means of pack animals is a matter concerning which there appears to be much doubt and uncertainty, and it seems highly probable, from the reports of persons who have recently penetrated the interior, that many of the places named have no local application, there being possibly no resident in the neighborhood.

SURVEYS OF ALASKA.—On April 5 the U. S. gunboat *Wheeling* left Seattle, Washington, carrying the surveying parties who will begin the first systematic mapping of the interior of Alaska. It is proposed to inaugurate work similar to that which has been so successfully begun in various parts of the United States. Topographic maps will be prepared showing the absolute elevations by means of contour lines located at intervals of 100 or 200 feet vertically, and referred to sea-level or some datum point whose altitude will be ultimately ascertained. The scale of mapping will probably be 1 to 90,000, with the idea of final publication on a scale of 1 to 250,000, or about four miles to an inch. While the topographic mapping is being carried on a thorough study of the rock structure of the country will be made, and especial attention given to the mineral resources, particularly gold and coal.

The general direction of the field parties has been entrusted to Mr. George H. Eldridge, an experienced geologist. On reaching Alaska the parties will be separated, and, as necessitated by the nature of the work, will proceed to a certain extent independently, rendezvousing about September 15 at St. Michaels, in order to return to the United States. Besides Mr. Eldridge, the geologic field work will be carried on by Mr. Arthur Keith, Mr. J. Edward Spurr and Mr. Alfred H. Brooks. The topographic mapping is to be done by Mr. Edward C. Barnard, Mr. William J. Peters, Mr. Robert Muldrow and Mr. William S. Post. These regular officers of the Geological Survey are assisted by a small force of picked men, whose reliability and endurance has been tested by many years of service in the rougher parts of the United States.

On arriving at Skagway, it is planned to drop Mr. Barnard with his assistants. This small party will proceed to the Klondike region by the most accessible route and from there down the Yukon to the international boundary between British Columbia and Alaska. On reaching this locality, work will be begun on the topographic map of the area lying immediately to the west of the 141st meridian and adjacent to the Yukon.

The party under charge of Mr. Barnard will be accompanied as far as the upper ramparts of the Yukon south of the Klondike region by a second party, in which Mr. Spurr will have charge of the geologic work and Mr. Post of the topographic. On reaching the vicinity of the Klondike region, this second party will turn back southerly up the White River for the purpose of exploring this stream, especially that portion west of the international boundary and south of the area to be mapped by Mr. Barnard. Crossing over the divide at the head of White River, it is probable that they will proceed northwesterly down the Tanana, which flows in a general way parallel to the upper part of the Yukon and enters this stream near St. James Mission.

Leaving the parties at Skagway, the main expedition will continue to Cook Inlet and up to the mouth of Sushitna River, which enters near the head of the inlet. Proceeding northerly up this river, it is proposed to reach a point at about the latitude of Fort St. Michael, where it is reported that several forks of the river unite. At this point Mr. Peters, topographer, with Mr. Brooks, assistant geologist, will leave the main party and proceed northeasterly into the country between the Copper River and the Tanana, connecting their traverse map with that made by the party under the direction of Mr. Spurr. The remainder of the force under Mr. Eldridge will proceed westward to the headwaters of the Kuskokwim and continue down that stream to the point where it approaches the lower Yukon and passing over the usual portage they will join the others at St. Michaels.

In addition to the Survey parties mentioned other expeditions have been sent out by the War Department. One of these, under Capt. B. Eldridge, is expected to explore the region near the Dalton trail or to the west on American soil. Two other parties are intended for Copper River and Cook Inlet, accompanying which are two assistant geologists, Walter C. Mendenhall and T. C. Schrader. At the same time the channels at the mouth of the Yukon are to be sounded by parties sent out by the Coast and Geodetic Survey. Thus it is expected by the end of the season to obtain fairly complete information concerning the accessibility to the interior by the various mountain passes and principal waterways. Coöperation has been established among various bureaux of the Government, by which a combined attack from different directions is being made upon the almost unknown areas. With the fairly accurate information thus obtained, the development of the natural resources of Alaska is in a fair way toward realization, and with the disappearance of the cloud of doubt and uncertainty which has surrounded this vast interior country there must result the destruction of many of the hazardous or even fraudulent speculative schemes now too prominently forced upon the attention of the public.

FOREST RESERVATIONS.—The surveys of the Forest Reservations, to which reference has frequently been made, are adding to the knowledge of the least known parts of the United States both as to position of topographic features and to resources in timber, in grazing and less directly in mineral wealth. The Reservations themselves are apparently in a somewhat insecure position, as attempts have been made by the Western Senators to nullify those recently proclaimed by President Cleveland. By act of Congress, approved June 4, 1897, surveys and examinations of the Reservations were begun and carried on as rapidly as possible during the remainder of that year. Further work has been suspended during the winter, but is to be renewed as soon as the melting of the snow in the mountains will permit access to the various areas. Without waiting, however, for the results of these surveys or for changes or modifications that may be made in the boundaries of the Reservations, the Senate, at the instance of some of the Western members, has attempted to indefinitely suspend the operation of the President's proclamation and to restore to the public domain the areas thus set aside. Considerable interest has been aroused in the matter, as there is apparently a growing belief both East and West in the desirability and even necessity of setting aside the vast tracts of land, mountainous in character, valueless for farming purposes and of use mainly for the production of trees. The withholding of these lands, it is believed, will be of great benefit to the development of the country and cannot work injury to any legitimate occupation, since mining is permitted and lands which are capable of being tilled are excluded.

A somewhat detailed report of the forest reserves has recently been made by Mr. Gifford Pinchot, a professional forester, formerly connected with the management of the timber properties of the Vanderbilt estate at Biltmore, North Carolina. In this he shows that by far the greater part of the reserves is covered with growing trees. The areas, however, include considerable tracts which have been stripped by occasional fires. In general it is probable that most of the forests throughout the country have been burned and have grown again during recent geologic periods. Given time enough, there is little doubt but that this process of natural reforestation will be repeated on the lands now devastated. On all sides successive steps in the return of burnt areas to fertility may be observed. Such lands will resume their former character if the increasing fires due to the presence of man can be checked.

The lands included within the reserves are for the most part capable of producing forests and may with propriety be held for this purpose. In comparison with the danger from fire, the loss to the national timber lands from cutting is almost insignificant. On the other hand, it may be said that under the present system of getting out timber, fire is almost sure to follow the logger. With the progress of settlement the loss or useless waste by fire is increasing with geometrical progression. The time required for new growth upon the burnt lands is long when compared with human life, and in general it may be said that at least a century must elapse before merchantable timber can be obtained.

The protection of timber is, however, not the sole reason for making the reserves. According to Mr. Pinchot, the forests have a favorable influence upon water-supply, performing in this respect a double function; on the one hand they serve to maintain the flow of water in the streams during times of drought, and on the other hand they are a powerful agency for the prevention of destructive floods.

The report of Mr. Pinchot, prepared for the use of the Secretary of the Interior, dwells particularly upon questions of administration—a matter which, though well worked out in several countries in Europe, has received little or no attention in the United States. It is urged that, in place of our characteristic American method of administering public affairs through political appointees, a corps of technically trained forest officers be created. The peculiar responsibilities placed upon the forestry officials demand a high standard of fidelity, honesty and ability, in addition to technical skill. To illustrate the dangers arising from the employment of men not possessing these qualifications, there has been cited the temptation to loose management, as in the matter of over-cutting. To cut too freely may involve the ultimate impoverishment and destruction of the forest. While the cutting is going on it may add greatly to the popularity of the forest officer and perhaps to his professional reputation for getting good supplies of timber and large money returns. If he be appointed for a limited term, as for four years, he may succeed in stripping the forest, and the results of his mismanagement not appear for years. The only safeguard against such danger is to be found in the creation of the professional spirit which results from a thorough training and devotion to a lifelong occupation.

The importance of beginning right in forest management is one which can scarcely be overestimated, since precedents or traditions are rapidly acquired and soon determine the character of the service. The confidence and good will of the local populations are essential and at the beginning are easily won or lost.

It is recommended that under a chief forester for all of the reserves and aided by one general inspector, there be 7 forest rangers, each of whom should reside in or near the reserves and should be held responsible for proper conduct of the work. These should make frequent inspections, keep necessary books and accounts, issue permits for use of timber, and attend to general business management. They should be assisted by 20 forest guards, who should act as patrols, seeing that the rules and regulations are strictly performed and guarding against injury from fires.

In addition to this body of men, relatively insignificant when the vast extent of the public forests is borne in mind, there is suggested the employment of 165 fire watchers, to be paid from $25 to $50 per year, on condition that they bind themselves to repair with all practicable speed to every fire occurring within assigned limits, and use all efforts to extinguish it. The creation of a body of men pledged to prevent fires and to assist in fighting them is believed to be entirely practicable under the existing conditions. Although the amount of pay in each case is small, yet ready money is so scarce among the owners of the small ranches adjacent to the forest reserves that the inducement to earn even this sum is sufficiently great to insure reasonable promptness and care. It is estimated that the total expenditure for all employees will not amount to more than $45,000 per year, and, with the $25,000 additional for miscellaneous expenses, the total will amount to $70,000; an exceedingly modest annual appropriation, in comparison with the benefits, since the annual forest fires have often consumed timber whose value may reach to millions of dollars and whose indirect damages may be even greater.

The object of the forest operations in any reserve should be to harvest the largest amount of timber consistent with steady improvement in the value and usefulness of the forest. The details of the work must be dependent upon the requirements of each individual case. Lumbering operations should not be undertaken by the Government, but the function of the forest officers restricted to the selection of trees to be cut, their sale at public auction, and the enforcement of rules governing their felling and removal. All regulations should be directed in the line of safety from fire, continued reproduction of the forest, with improvements in composition and yield, the filling of local needs for forest products, and lastly, a fair return in money to the Government. The application of such principles must lead to widely diverse results in different forests. In some places nothing but protection from fire can be done for many years; elsewhere mature trees may be removed, while in other places the timber needed for near-by consumption can be taken with advantage to the forest.

The thorough system above outlined is still a matter dependent for its ultimate realization upon the education of our citizens in the resources and needs of the great West. Immediate personal gain and private interest are crying loudly against the broad policy of holding for the future anything which can be in part enjoyed at present. The firing of a mountain side covered with magnificent forest to afford a tourist entertainment for a single hour is apparently, in the minds of many, a more sensible proceeding than protecting the timber for the uses and needs of the unknown settlers who may gradually come in during succeeding years. License to take and destroy both timber and game is demanded as the right of the individual who is sufficiently adventurous to penetrate to regions beyond the lands now in private ownership. It is only by pointing to the struggles of citizens of the Eastern States in slowly restoring in part their wasted forests that our people can be brought to appreciate the necessity of foresight and of protecting the perishable resources of the West.

FLOODS IN THE MISSISSIPPI VALLEY.—The prevailing high water in the Ohio and Mississippi Valleys has, to a slight extent, renewed the alarm felt last year at the apparently increasing destructiveness of the floods along our great artery of internal commerce, and has called public attention to the studies which have been and are being made of the regimen of the river. These are founded on careful geographic research, or what may more properly be termed hydrographic investigations. The latest, and one of the most notable contributions to knowledge, is the report just printed, prepared by Capt. Hiram M. Chittenden, of the Corps of Engineers, U. S. A. The work was undertaken in conformity with a clause contained in the River and Harbor Act of June 3, 1896, providing for the examination of sites, and report upon the practicability and desirability of constructing reservoirs for the storage and utilization of water; to prevent floods and overflows, erosion of river banks, and breaking of levees. The further stipulation was given that one reservoir site at least should be surveyed in each of the States of Wyoming and Colorado.

After a broad study of the whole subject, the conclusion was drawn that it is perhaps physically practicable to build reservoirs of sufficient aggregate capacity on the watershed of any stream, even so large a river as the Mississippi, so as to exercise some influence in diminishing the height of floods. The great cost of such works, however, as compared with results to be expected, will operate to prevent their construction unless the water thus held is needed for industrial purposes; in other words, the possible amelioration of flood conditions will not warrant the construction of great reservoirs, even if suitable localities for them existed. It is pointed out, moreover, that flood protection and industrial use are not entirely compatible objects. In order to hold the floods the reservoir should be kept emptied until needed, and should be again emptied as soon as possible, as local floods in a wet year may follow in quick succession. If used for industrial purposes, it is probable that not more than 50 per cent. of their capacity should be depended upon as reserve for flood storage.

One important geographic feature which the public at large does not appreciate is brought out clearly in this discussion. It is a common error to suppose that the great floods of the lower Mississippi come from the melting snows in the Rocky Mountains. As a matter of fact the floods of the Mississippi occur at seasons when the flow from the mountains is very small. At the time of the great flood of 1897, the Arkansas River contained practically no water in western Kansas, and the discharge of the Platte in Nebraska was relatively small. The destructive floods of the Mississippi are the result of heavy rains in the low region south or east of the Missouri. This stream, although it drains the largest catchment area, is not an important factor, the controlling element being the Ohio River.

The magnitude of the floods in the Lower Mississippi depends upon accidental combinations of storm-flow from many tributaries, no one of these, except the Ohio, being capable of producing serious consequences in the main river; but if, when the Ohio is high, several of the other tributaries discharge an excessive amount of water simultaneously into the main stream, great disasters are liable to follow. Fortunately, however, the flood waves from various directions usually arrive at different periods, and destructive combinations are infrequent.

It has been estimated that when the total discharge of the Mississippi at Cairo, above the bank-full stage, would cover an area of 8,500 square miles to a depth of 10 feet, to hold this would require reservoirs of an average of 10 feet in depth, and having an area equal to that of the State of Massachusetts, or about one-fifth the size of Ohio, Kentucky, or Tennessee. The topography of the headwaters of the Ohio and Upper Mississippi Rivers, while in a general way favorable for reservoir construction, is not of the character to permit the construction of storage work of this enormous extent. On the Lower Mississippi, however, there are vast areas where, from the topographical standpoint, such storage of superfluous water might be had. The St. Francis Basin, lying along the river, has an overflowed area of 6,700 square miles. From head to foot this basin has a fall of 120 feet. It has been suggested by Mr. James A. Seddon, Assistant Engineer, U. S. A., that this might be divided by dikes into basins or compartments, distributing the slope of the basin in such a fashion that the compartments would succeed each other from north to south in a gradual descending series. The superfluous water stored in these basins could be gradually released, increasing the low-water flow and radically improving the navigation of the Mississippi from Helena to the sea. From this point, northerly, slack-water navigation could be provided through the basin by means of five or six locks suitably placed in the retaining dikes of the separate compartments.

The results of the surveys demonstrate that the construction of a general system of reservoirs in the arid region might cause an appreciable reduction in the flood height of the Missouri River during a June rise. This would not have any influence upon the destructive floods of the Mississippi, since these occur usually at an earlier date and originate from other causes. Although the reservoirs would thus be of little or no benefit to navigation, yet such works are indispensable to the development of the West through agriculture by irrigation. Private enterprise cannot successfully construct these great storage works, since under our present laws there is little or no security of ownership in waters thus held. As a public enterprise, however, the benefits both directly and indirectly must be largely in excess of the expenditures.

The geographical distribution of the flowing water, as it has been found day by day for a series of years at various points in the Mississippi River and its tributaries, is graphically shown by two plates prepared by Mr. James A. Seddon. These notable contributions to exact knowledge enable a person at a glance to grasp the combinations that make up the floods at Cairo, and also exhibit the progress of waters down the main stream. Beginning with the Missouri River at Sioux City, the daily fluctuations are shown throughout the years 1880–85 inclusive at this point, at Kansas City and at St. Charles near the mouth of the river. In the same way quantities at Prescott, Clayton and Grafton, on the upper Mississippi, are exhibited, at St. Louis, on the middle Mississippi, and at Paducah on the Ohio River; all of these being combined to make the total flow at Cairo.

Information of this character, giving our citizens correct knowledge of the geographical factors which limit or favor the development of the natural resources of the country, is of inestimable value in encouraging wise action or in preventing extravagant expenditure through erroneous impressions, such as those which have underlaid the popular demands for water storage in the arid region as the sure preventive of floods in the lower Mississippi.

GEOGRAPHIC NAMES.—The U. S. Board on Geographic Names, created September 4, 1890, has issued a pamphlet containing recent decisions up to January 1, 1898. This is supplemental to the first report printed in 1892, which contains 1,781 decisions. The recent report brings up the total number of decisions to nearly 4,000, or with county names up to over 6,700.

The Board was created in order that uniform usage in regard to geographic nomenclature and orthography might obtain throughout the Executive Departments of the Government, particularly upon maps and charts. It is constituted of departmental officers detailed from the various surveys or bureaux issuing maps and geographical publications. Its membership embraces ten persons, Mr. Henry Gannett, Chief Geographer of the U. S. Geological Survey, being chairman, and Mr. Marcus Baker, Cartographer of the same organization, secretary.

Among the decisions rendered are many of names concerning which there has been a long dispute. Two forms of the various spellings, Allegany and Allegheny, are given. The former is adopted for the town in Potter County, Pa., and the second for the river and mountains in the eastern United States. Cheyenne is taken as the official spelling of the river of South Dakota tributary to the Missouri, and not Sheyenne nor Shyenne, but the river of North Dakota tributary to the Red River is spelled Sheyenne. The now well-known starting point for the gold fields of Alaska is spelled Dyea. The highest known peak in the world is named Everest, and not Gaurisankar; while the well-known volcano of Japan is to be written Fujiyama, and not any one of the dozen or more forms which have been employed by different writers in the past.

There is a well-marked tendency to drop the word city as part of the name of the towns and villages so plentifully designated, especially throughout the West; for example, in Kansas, Garden City has been shortened to Garden, and Dodge City to Dodge. The principal city of Cuba is designated as Habana, and not Havana. The well-known narrow passage in East River, New York, retains its familiar form of Hell Gate. The intermittent flowing river of eastern Colorado is correctly termed Purgatory and not Purgatoire, or, in the language of the cowboy, the Picket Wire. The creek and falls in the Catskills in Greene County, New York, has been definitely designated as Kaaterskill, while its neighbor in the same county is known as Plaaterskill. In writing about the gold fields of Alaska we are to use the word Klondike and not Clondyke or other combinations. The lake in British Columbia and the river in the same region and in portions of Montana is known as Kootenai, and the lake in northern Idaho is called Pend Oreille.

The familiar name of Grey Town, so often used in reference to the Nicaragua Canal, is replaced by the official designation, San Juan del Norte; while the seaport town of Egypt on the Red Sea appears as Suakin and not Sawakin nor Suakim. The Republic of South Africa is Transvaal and not the South African Republic. The well-known volcanic peak, the highest in sight from Puget Sound, is officially designated as Mt. Rainier, and, despite the earnest protests of the citizens of Tacoma, is no longer to be called Mt. Tacoma on the official maps. These and many other interesting decisions of general or local interest are to be found in the publication to which reference has been made. N.